Remarks/Arguments

Applicants have amended the specification to remove the reference to the claims in the summary of the invention, as requested by the Examiner.

Applicants have amended Claim 4 to remove the "method according to any of claims 1", as requested by the Examiner.

No new matter was added in view of these amendments.

I. 35 U.S.C. § 102(b)

The Examiner rejected Claims 1-6 under 35 U.S.C. § 102(b) as being anticipated by Sudharsanan et al. (U.S. Patent # 5,764,698, hereafter referred to as 'Sudharsanan'). Applicants disagree with this rejection.

Claim 1 of the Applicants' invention claims:

"performing a Fourier Transformation with a length of L samples for calculation of a minimum masking threshold by calculating k subtransformations over 2^N samples with $k*2^N=L$;

fitting together the results of the k subtransformations;

arranging L samples of the audio signal in a frame for transmission."
(emphasis added)

These claimed steps are neither disclosed nor suggested in Sudharsanan, alone or in combination.

As is well known in the art, a FFT is a special discrete Fourier Transformation for which the number of samples has to be a power of two, e.g. 1024. On the other hand the frame length of MPEG 1 Audio Layer II is 1152 samples that is not a power of two. The inventors realized that a 1152 point FFT can be performed for audio encoding by using k subtransformations with a length of 2^N (e.g. 9 subtransformations with a length of 128) and fitting together the results of the k subtransformations. This audio processing method reduces the required computing power compared solution known in the art, where a 1024 point FFT operation has to be run twice.

Sudharsanan describes the compression and processing of audio-signals according to the MPEG audio standard (see Sudharsanan, col 3. line 48 to col. 4, line 44) Sudharsanan also discloses a method for bit rate saving encoding of

audio signals using a psychoacoustic model, wherein a Fourier Transformation is performed for calculating a minimum masking threshold and samples of the audio signal are arranged in a frame for transmission.

Sudharsanan does not disclose or suggest a Fourier Transformation operation with a length being identical to the number of samples arranged in a frame. Furthermore, Sudharsanan does not disclose calculating subtransformations and fitting together the results of the subtransformations for performing the Fourier Transformation as claimed in Claim 1.

The cited paragraph of Sudharsanan (col. 5, lines 15 to 40) merely discloses for Layer I a frame size of 384 samples together with a 512 point Fourier Transformation and for Layer II a frame size of 1152 samples together with a 1024 point Fourier Transformation. Therefore, in the system of Sudharsanan for Layer I as well as for Layer II the frame size is different from the transformation length. Splitting up the Fourier Transformations into subtransformations is not at all mentioned, as claimed in Claim 1.

For the reasons given above for Claim 1, Applicants request that the Examiner remove the rejection to Claim 1. Applicants also request that the Examiner remove the rejections to Claims 2-6, as these claims are dependent on Claim 1.

Having fully addressed the Examiner's rejections it is believed that, in view of the preceding amendments and remarks, this application is in condition for allowance. Accordingly, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the Applicant's attorney at (609) 734-6809, so that a mutually convenient date and time for a telephonic interview may be scheduled.

Applicants request a two-month extension under 37 C.F.R. 1.136(a) to submit this response and amendment. A fee of 420.00 for the requested two-month extension is to be charged to deposit account 07-0832. Any other fees that are owed in connection with this response are to be charged to deposit account 07-0832.

Respectfully submitted,

By: Joel M. Fogelson

Reg. No. 43, 613
Phone (609) 734-6809

Patent Operations
Thomson Licensing Inc.
P.O. Box 5312
Princeton, New Jersey 08543-5312
August 12, 2004